

Amendments to the Claims

Please make the following amendments to the Claims:

1. (Currently Amended) An apparatus for automatically adjusting the quality of a scanned image, the apparatus comprising:

a conversion module configured to produce a processed image matrix by modifying each value in a scanned image matrix using a table of values assigned to each element of the scanned image matrix;

a measurement module configured to determine a quality of the processed image matrix and to store a quality-history parameter in response to the determined quality and to track a quality history of the quality parameter of previously processed image matrices; and

a quality adjustment module configured to adjust the quality of the processed image matrix if the quality history shows a decrease in quality.

2. (Original) The apparatus of claim 1, wherein the quality adjustment module further comprises a table adjustment module configured to change an entry in the table of values assigned to each pixel.

3. (Currently Amended) The apparatus of claim 1, wherein the quality parameter comprises an average brightness variable and the quality history comprises an average brightness history variable, and the measurement module further comprises an average brightness module configured to determine a value of ~~an~~ the average brightness variable in response to the determined quality and to use the value of the average brightness variable to change ~~an~~ the average brightness history variable.

4. (Currently Amended) The apparatus of claim 1, wherein the quality history comprises the average brightness history variable and the quality history comprises an average brightness history variable, and the measurement module further comprises an average brightness module configured to decrease ~~an~~ the average brightness history variable by a small amount if ~~an~~ the average brightness variable is lower than a present value of the average brightness history variable and to increase the average brightness variable by a large amount if the average brightness variable is higher than the present value of the average brightness history variable.

5. (Currently Amended) The apparatus of claim 1, wherein the quality parameter comprises a maximum brightness variable and the quality history comprises a maximum brightness history variable, and the measurement module further comprises a maximum brightness module configured to determine a value of ~~a~~ the maximum brightness variable in response to the determined quality and to use the value of the maximum brightness variable to change ~~a~~ the maximum brightness history variable.

6. (Currently Amended) The apparatus of claim 1, wherein the quality history comprises maximum brightness history variable and the quality history comprises a maximum brightness history variable, and the measurement module further comprises a maximum brightness module configured to decrease ~~a~~ the maximum brightness history variable by a small amount if ~~a~~ the maximum brightness variable is lower than a present value of the maximum brightness history variable and to increase the maximum brightness variable by a large amount if the maximum brightness variable is higher than the present value of the maximum brightness history variable.

7. (Currently Amended) The apparatus of claim 1, wherein the quality adjustment module further comprises an average brightness adjustment module configured to determine an amount to adjust brightness of the processed image matrix if a value of an average brightness history variable crosses an average brightness threshold and adjusting the quality of the processed image further comprises adjusting the brightness of the processed image matrix based on the determined amount.

8. (Currently Amended) The apparatus of claim 1, wherein the quality adjustment module further comprises a maximum brightness adjustment module configured to determine an amount to adjust brightness of the processed image matrix if a value of a maximum brightness history variable crosses a maximum brightness threshold and adjusting the quality of the processed image further comprises adjusting the brightness of the processed image matrix based on the determined amount.

9. (Original) The apparatus of claim 1, wherein the quality is determined using at least one quality parameter selected from the group consisting of an average brightness, a maximum brightness, a video gradient, and a contrast.

10. (Currently Amended) A system for automatically adjusting the quality of a scanned image, the system comprising:

a scanner configured to scan images and produce the scanned image in a digital format wherein each pixel corresponds to an element in a scanned image matrix;

~~a computer network connected to the scanner via a communications channel;~~

~~a server that controls the computer network;~~

~~a computer connected to the computer network configured to control the scanner and receive scanned images from the scanner through the computer network;~~

a conversion module configured to produce a processed image matrix by modifying each value in the scanned image matrix using a table of values assigned to each element of the scanned image matrix;

~~a table adjustment module configured to change an entry in the table of values assigned to each pixel by the amount determined by the average brightness adjustment module and the maximum brightness adjustment module.~~

a measurement module configured to determine a quality of the processed image matrix and to generate an average brightness variable and a maximum brightness variable in response to the determined quality;

an average brightness module configured to decrease ~~the~~ an average brightness history variable by a small amount if the average brightness variable is lower than a present value of the average brightness history variable and to increase the average brightness variable by a large amount if the average brightness variable is higher than the present value of the average brightness history variable;

a maximum brightness module configured to decrease ~~the~~ an maximum brightness history variable by a small amount if the maximum brightness variable is lower than a present value of the maximum brightness history variable and to increase the maximum brightness variable by a large amount if the maximum brightness variable is higher than the present value of the maximum brightness history variable;

an average brightness adjustment module configured to ~~determine an amount to~~ adjust brightness of the processed image matrix if a value of ~~an~~ the average brightness history variable crosses an average brightness threshold; and

a maximum brightness adjustment module configured to ~~determine an amount to~~ adjust brightness of the processed image matrix if a value of ~~a~~ the maximum brightness variable crosses a maximum brightness threshold.

11. (Currently Amended) A process for automatically adjusting the quality of a scanned image, the process comprising:

producing a processed image matrix by modifying each value in a scanned image matrix using a table of values assigned to each element of the scanned image matrix;

determining the quality of the processed image matrix and storing a quality history of previously processed image matrices; and

adjusting the quality of the processed image matrix if the quality history shows a decrease in quality.

12. (Original) The process of claim 11, wherein adjusting the quality of the processed image matrix comprises changing an entry in the table of values assigned to each pixel.

13. (Currently Amended) The process of claim 11 wherein determining the quality of a processed image matrix and storing a quality history of previously processed image matrices comprises:

~~averaging the values of~~ the processed image matrix to determine an average brightness variable;

comparing the average brightness variable to a present value of an average brightness history variable representing an average brightness of previous processed image matrices;

decreasing the average brightness history variable by a small amount if the average brightness variable is less than a present value of the average brightness history variable; and

increasing the average brightness history variable by a large amount if the average brightness variable is greater than the present value of the average history brightness variable.

14. (Currently Amended) The process of claim 11 wherein determining the quality of a processed image matrix and storing a quality history of previously processed image matrices comprises:

finding a maximum of ~~the~~ values of the processed image matrix to determine a maximum brightness variable;

comparing the maximum brightness variable to a present value of a maximum brightness history variable representing an average value of ~~the~~ a maximum brightness of previous processed image matrices;

decreasing the maximum brightness history variable by a small amount if the maximum brightness variable is less than ~~the~~ a present value of the maximum brightness history variable; and

increasing the maximum brightness history variable by a large amount if the maximum brightness variable is greater than the present value of the maximum brightness history variable.

15. (Currently Amended) The process of claim ~~11~~ 13, ~~wherein adjusting the quality of the processed image matrix comprises~~ further comprising determining an amount to adjust brightness of the processed image matrix if a value of an average brightness history variable crosses an average brightness threshold ~~and adjusting the quality of the processed image further comprises adjusting the brightness of the processed image matrix based on the determined amount.~~

16. (Currently Amended) The process of claim ~~11~~ 14, ~~wherein adjusting the quality of the processed image matrix comprises~~ further comprising determining an amount to adjust brightness of the processed image matrix if a value of a maximum brightness history variable crosses a maximum brightness threshold ~~and adjusting the quality of the processed image further comprises adjusting the brightness of the processed image matrix based on the determined amount.~~

17. (Original) The process of claim 11, wherein the quality is determined using at least one quality parameter selected from the group consisting of an average brightness, a maximum brightness, a video gradient, and a contrast.

18. (Currently Amended) A process for automatically adjusts the quality of a scanned image, the process comprising:

- scanning an image to produce values in a scanned image matrix, each element in the scanned image matrix representing a pixel of the scanned image;
- producing a processed image matrix by modifying each value in the scanned image matrix using a table of values assigned to each element of the scanned image matrix;

averaging ~~the values of~~ the processed image matrix to determine an average brightness variable;

comparing the average brightness variable to a present value of an average brightness history variable representing an average brightness of previous processed image matrices;

decreasing the average brightness history variable by a small amount if the average brightness variable is less than a present value of the average brightness history variable;

increasing the average brightness history variable by a large amount if the average brightness variable is greater than the present value of the average history brightness variable;

~~finding a maximum of the values the processed image matrix to determine a maximum brightness variable;~~

~~comparing the maximum brightness variable to a present value of a maximum brightness history variable representing an average value of the maximum brightness of previous processed image matrices;~~

~~decreasing the maximum brightness history variable by a small amount if the maximum brightness variable is less than the present value of the maximum brightness history variable;~~

~~increasing the maximum brightness history variable by a large amount if the maximum brightness variable is greater than the present value of the maximum brightness history variable;~~

determining an amount to adjust brightness of the processed image matrix if a value of an average brightness history variable crosses an average brightness threshold; and

~~determining an amount to adjust brightness of the processed image matrix if a value of the maximum brightness history variable crosses a maximum brightness threshold; and~~

adjusting the brightness of the processed image matrix by changing an entry in the table of values assigned to each.

19. (Currently Amended) A computer readable storage medium comprising computer readable code configured to carry out a process for automatically adjusting the brightness of a scanned image, the process comprising:

~~producing a processed image matrix by modifying each value in a scanned image matrix using a table of values assigned to each element of the scanned image matrix;~~

~~determining the quality of the processed image matrix and to store a quality history;~~
~~and~~

adjusting the quality of the processed image matrix if the quality history shows a decrease in quality;

scanning an image to produce values in a scanned image matrix, each element in the scanned image matrix representing a pixel of the scanned image;

producing a processed image matrix by modifying each value in the scanned image matrix using a table of values assigned to each element of the scanned image matrix;

finding a maximum of values of the processed image matrix to determine a maximum brightness variable;

comparing the maximum brightness variable to a present value of a maximum brightness history variable representing an average value of the maximum brightness of previous processed image matrices;

decreasing the maximum brightness history variable by a small amount if the maximum brightness variable is less than the present value of the maximum brightness history variable;

increasing the maximum brightness history variable by a large amount if the maximum brightness variable is greater than the present value of the maximum brightness history variable.;

determining an amount to adjust brightness of the processed image matrix if a value of the maximum brightness history variable crosses a maximum brightness threshold; and

adjusting the brightness of the processed image matrix by changing an entry in the table of values assigned to each.

20. (Currently Amended) An apparatus for automatically adjusting the brightness of a scanned image, the apparatus comprising:

means for producing a processed image matrix by modifying each value in a scanned image matrix using a table of values assigned to each element of the scanned image matrix;

means for determining the quality of the processed image matrix and to store a ~~quality history~~ parameter in response to the determined quality and to track a quality history of the quality parameter of previously processed image matrices; and

means for adjusting the quality of the processed image matrix if the quality history shows a decrease in quality.